

WHAT IS CLAIMED IS:

1. A method for producing a monolayer polymeric film having improved strength and stiffness in the machine direction and in the transverse direction, the method comprising the steps of:

- a. combining a primary polymeric structural material and a secondary polymeric material together to form a unitary mixture thereof;
- b. directing said unitary mixture to extrusion means to create an extruded unitary mixture; and
- c. directing said extruded unitary mixture to a plurality of stretching rollers for stretching of said extruded unitary mixture, wherein said plurality of stretching rollers includes one or more heat-stabilization rollers operated at a temperature sufficient to impart substantial stiffness and substantial flatness to said extruded unitary mixture without delamination and while controlling film curling.

2. The method as claimed in **Claim 1** wherein said one or more heat-stabilization rollers operates at a temperature of about 270° F.

3. The method as claimed in **Claim 2** wherein said one or more heat-stabilization rollers have a high-chrome finish of less than eight RMS.

4. The method as claimed in **Claim 1** wherein the step of directing said extruded unitary mixture to a plurality of stretching rollers includes the steps of:

- a. directing said extruded unitary mixture to a first casting chiller roller;
- b. directing said extruded unitary mixture to a second casting chiller roller;
- c. directing said extruded unitary mixture to a pair of pre-heater rollers;
- d. directing said extruded unitary mixture to a plurality of stretching and orientation rollers; and
- e. directing said extruded unitary mixture to a first heat-stabilization roller and a second heat-stabilization roller of said one or more heat-stabilization rollers, wherein said first heat-stabilization roller and

said second heat-stabilization roller have independent driver controllers.

5 **5.** The method as claimed in **Claim 4** wherein said first heat-stabilization roller and said second heat-stabilization roller are at an operating temperature of about 270° F to about 295° F.

6 **6.** The method as claimed in **Claim 5** wherein said primary polymeric structural material is polypropylene.

10 **7.** The method as claimed in **Claim 6** wherein said secondary polymeric material is vinyl-acetate.

15 **8.** The method as claimed in **Claim 7** wherein said vinyl-acetate is provided in an ethylene-vinyl-acetate copolymer.

20 **9.** The method as claimed in **Claim 6** wherein said secondary polymeric material is methacrylate.

25 **10.** The method as claimed in **Claim 5** wherein said primary polymeric structural material is polyethylene.

30 **11.** The method as claimed in **Claim 10** wherein said secondary polymeric material is vinyl-acetate.

35 **12.** The method as claimed in **Claim 11** wherein said vinyl-acetate is provided in an ethylene-vinyl-acetate copolymer.

40 **13.** The method as claimed in **Claim 10** wherein said secondary polymeric material is methacrylate.

